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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/777,840	02/12/2004	Ming-Lai Lai	56510US004 (P01,0391 01)	5900

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EXAMINER	
WILSON, JOHN J	
ART UNIT	**PAPER NUMBER**
3732	

SHORTENED STATUTORY PERIOD OF RESPONSE	NOTIFICATION DATE	DELIVERY MODE
3 MONTHS	03/22/2007	ELECTRONIC

Please find below and/or attached an Office communication concerning this application or proceeding.

If NO period for reply is specified above, the maximum statutory period will apply and will expire 6 MONTHS from the mailing date of this communication.

Notice of this Office communication was sent electronically on the above-indicated "Notification Date" and has a shortened statutory period for reply of 3 MONTHS from 03/22/2007.

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LegalUSDocketing@mmm.com
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Office Action Summary	Application No.	Applicant(s)	
	10/777,840	LAI ET AL.	
	Examiner	Art Unit	
	John J. Wilson	3732	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *08 January 2007*.

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *50-106* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *50-106* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☐ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

Claims 50-53, 58 and 59 are rejected under 35 U.S.C. 103(a) as being unpatentable over Chishti et al (6471511) in view of Chishti et al (5975893). Chishti (511) shows modeling a first position, column 5, lines 13-15, modeling a desired second position, column 5, line 23 and performing a finite element analysis there between, column 5, lines 19-25. Chishti (511) shows using intermediate positions, and therefore, does not show using only the original and final positions. Chishti (893) teaches that one or more of the intermediate appliances can be skipped, column 5, lines 1-7. It would be obvious to one of ordinary skill in the art to modify Chishti (511) to skip intermediate positions as shown by Chishti (893) in order to reduce costs. To not include any intermediate steps is an obvious matter of choice in the number of intermediate steps that are skipped to the skilled artisan. Further, the present disclosure teaches using intermediate steps, therefore, there is no criticality to only using the original and final positions. As to claim 51, to calculate from final to original positions is merely an obvious matter of choice in the starting point of known calculations to the skilled artisan. As to claim 52, see the use of appliances at column 2, lines 12-15 and column 5, line 17. As to claim 58, Chishti (511) teaches using materials and tissue. The specific

tissue used is an obvious matter of choice in using known parameters that affect the forces on teeth. As to claim 59, Chishti (511) shows using a display, however, does not specifically state the information that is displayed. The specific information displayed is an obvious matter of choice in the information that it is desired to communicate.

Claims 54-57 are rejected under 35 U.S.C. 103(a) as being unpatentable over Chishti et al (6471511) in view of Chishti et al (5975893) as applied to claim 50 above, and further in view of Chishti et al (2001/0002310). The above combination shows the steps as described above, however, does not show the use of vectors. Chishti (310) teaches using vectors, see paragraphs 162-165. It would be obvious to one of ordinary skill in the art to modify the above combination to include the use of vectors as shown by Chishti (310) in order to use known analysis techniques to obtain the desired results.

Claims 60, 61, 66-69 and 103-106 are rejected under 35 U.S.C. 103(a) as being unpatentable over Chishti et al (6471511). Chishti (511) shows modeling a first position, column 5, lines 13-15, modeling a desired second position, column 5, line 23 and performing a finite element analysis there between, column 5, lines 19-25. Chishti does not state using contact pairs during finite element analysis. It is well known that forces are applied directly through contact points, therefore, any teaching of evaluating forces on teeth inherently suggests considering the areas where the forces are to be transferred, and as such, would be obvious to one of ordinary skill in the art. As to claim 61, to calculate from final to original positions is merely an obvious matter of choice in

the starting point of known calculations to the skilled artisan. As to claim 68, Chishti (511) teaches using materials and tissue. The specific tissue used is an obvious matter of choice in using known parameters that affect the forces on teeth. As to claim 69, Chishti (511) shows using a display, however, does not specifically state the information that is displayed. The specific information displayed is an obvious matter of choice in the information that it is desired to communicate.

Claims 62-65 are rejected under 35 U.S.C. 103(a) as being unpatentable over Chishti et al (6471511) as applied to claim 60 above, and further in view of Chishti et al (2001/0002310). Chishti (511) shows the steps as described above, however, does not show the use of vectors. Chishti (310) teaches using vectors, see paragraphs 162-165. It would be obvious to one of ordinary skill in the art to modify Chishti (511) to include the use of vectors as shown by Chishti (310) in order to use known analysis techniques to obtain the desired results. Chishti (511) shows using intermediate positions, and therefore, does not show using only the original and final positions. Chishti (893) teaches that one or more of the intermediate appliances can be skipped, column 5, lines 1-7. It would be obvious to one of ordinary skill in the art to modify Chishti (511) to skip intermediate positions as shown by Chishti (893) in order to reduce costs. To not include any intermediate steps is an obvious matter of choice in the number of intermediate steps that are skipped to the skilled artisan. Further, the present disclosure teaches using intermediate steps, therefore, there is no criticality to only using the original and final positions. As to claim 65, to calculate from final to original

positions is merely an obvious matter of choice in the starting point of known calculations to the skilled artisan.

Claims 70-102 are rejected under 35 U.S.C. 103(a) as being unpatentable over Chishti et al (6471511) in view of Chishti et al (2001/0002310). Chishti (511) shows modeling a first position, column 5, lines 13-15, modeling a desired second position, column 5, line 23 and performing a finite element analysis there between, column 5, lines 19-25. Chishti (511) does not show choosing from existing appliances. Chishti (310) teaches selecting from a library of attachments, paragraph [0141]. It would be obvious to one of ordinary skill in the art to modify Chishti (511) to include selected from stored appliances as shown by Chishti (310) in order to better select the desired appliances to apply the desired forces. Chishti (511) shows using a display, however, does not specifically state the elements displayed. The specific information displayed is an obvious matter of choice in the information that it is desired to communicate. To not choose appliances that have an undesired effect is an obvious matter of choice in the selection of the appliances to obtain the desired results. To use stresses and strains in a finite element calculation is well known and would be obvious to one of ordinary skill in the art. As to claims 74 and 85, to calculate from final to original or second to original positions is merely an obvious matter of choice in the starting point of known calculations to the skilled artisan. As to claim 75, the specific order of evaluating the forces on the different elements is an obvious matter of choice in the order of known steps to one of ordinary skill in the art.

Response to Arguments

Applicant's arguments filed January 8, 2007 have been fully considered but they are not persuasive. As stated before, Chishti (893) does not teach eliminating all intermediate steps, however, the reference does teach that one of ordinary skill in the art can choose to eliminate intermediate steps depending on the patient, and thus teaches, as is well known in the orthodontic art, that the practitioner chooses the number of steps needed to move the teeth to the desired location in view of the patient's situation. Combining this art known level of skill with Chishti (511) is proper and obvious. The examiner's assertion that using one step, that is only form the original to final positions, would be an obvious matter of choice in view of the above teaching addressed the specific claim language and is proper. Applicant argues that the holding of non-criticality of eliminating some or all of the intermediate steps is immaterial to what Chishti (893) and (511) show. It is held that the non-criticality is material to the holding of obviousness because, in view of no disclosed criticality, the specific number of steps that are eliminated or used would be within the purview of a skilled artisan. The statement of Chishti (893), column 3, lines 31-45, cited by applicant, teaches that the system will comprise at least one intermediate appliance teaches the disclosed invention, however, it does not teach that finite element analysis would not work if no intermediate appliance were used. The patent teaches that the analysis is can be done from one appliance to the next, and one of ordinary skill in the art would realize that it would work if applied to initial and intermediate appliances as well as initial to a final appliance. With respect to holding of obvious to include contact pairs when calculating

forces through finite element analysis, it is noted that Chishti (511) teaches braces including brackets and archwires, column 2, lines 1-15. One of ordinary skill in the art would understand that any method used to calculate movement of teeth without including the forces generated by contact of the archwire with the bracket slots would fail, and as such, to include such forces would have been obvious. With respect to using subsets, the selection of appliance for a library taught by Chishti (310) inherently and obviously involves selecting a subset from the library. Using brackets in sets is well known in the art. Organizing these sets into subsets is merely a matter of choice in grouping known elements to the skilled artisan.

Conclusion

THIS ACTION IS MADE FINAL. Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to John J. Wilson whose telephone number is 571-272-4722). The examiner can normally be reached on Monday through Thursday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Cris Rodriguez, can be reached at 571-272-4964. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

John J. Wilson
Primary Examiner
Art Unit 3732

jjw
March 15, 2007